

Applicant : Stephen C. Wolf
Serial No. : 10/796,917
Page : 2

IN THE CLAIMS:

Please cancel Claims 2 and 22. Please amend Claims 1, 13, 15, 21, and 40 and enter new Claims 46 and 47 as follows:

1. (currently amended) A paddle diverter assembly comprising:

an arm; and

an actuator for moving said arm from a home position to a diverting position, said actuator being adapted to permit said arm to move away from the diverting position upon impact with an object to be diverted to thereby absorb at least some of the impact between the arm and the object being diverted and adapted to return said arm to said diverting position by an electromagnetic field.

2. (cancelled)

3. (original) The paddle diverter assembly according to Claim 1, wherein said arm comprises a driven diverting surface.

4. (original) The paddle diverter assembly according to Claim 3, wherein said driven diverting surface comprises a drive belt.

5. (original) The paddle diverter assembly according to Claim 1, wherein said actuator extends downwardly from said arm no more than 12 inches.

6. (original) The paddle diverter assembly according to Claim 1, wherein said actuator comprises a motor and a servo controller selectively powering said motor, said motor permitting said arm to move away from the diverting position upon impact with the object and forming an electric spring.

Applicant : Stephen C. Wolf
Serial No. : 10/796,917
Page : 3

7. (original) The paddle diverter assembly according to Claim 1, wherein said arm includes a spring, said spring deflecting to absorb impact when said arm impacts the object being diverted by said arm.

8. (original) The paddle diverter assembly according to Claim 7, wherein said spring comprises a plate spring.

9. (original) The paddle diverter assembly according to Claim 8, wherein said arm includes a medial portion, and said spring being provided at said medial portion.

10. (original) The paddle diverter assembly according to Claim 9, wherein said plate spring includes a longitudinal extent, said arm having a longitudinal axis, said longitudinal extent extending along said longitudinal axis.

11. (original) The paddle diverter assembly according to Claim 10, wherein said arm comprises a driven diverting surface.

12. (original) The paddle diverter assembly according to Claim 11, wherein said driven diverting surface comprises a driven belt.

13. (currently amended) [[The]] A paddle diverter assembly according to Claim 12, comprising: an arm, said arm comprising a driven diverting surface, said driven diverting surface comprising a driven belt;

an actuator for moving said arm from a home position to a diverting position, said actuator being adapted to permit said arm to move away from the diverting position upon impact with an object to be diverted to thereby absorb at least some of the impact between the arm and the object being diverted;

Applicant : Stephen C. Wolf
Serial No. : 10/796,917
Page : 4

whercin said arm includes a spring, said spring deflecting to absorb impact when said arm impacts the object being diverted by said arm, said spring comprising a plate spring;

said arm including a medial portion and a longitudinal axis, and said spring being provided at said medial portion and having a longitudinal extent, said longitudinal extent extending along said longitudinal axis of said arm; and

wherein said plate spring includes a longitudinal groove extending along said longitudinal extent, said drive belt having a rib, said rib extending into said groove wherein said groove provides vertical support to said drive belt.

14. (original) The paddle driver assembly according to Claim 4, wherein said arm supports belt pulleys for supporting said drive belt.

15. (currently amended) [[The]] A paddle diverter assembly according to Claim 14, comprising: an arm, said arm comprising a driven diverting surface, and said driven diverting surface comprising a drive belt, said arm supporting belt pulleys for supporting said drive belt; an actuator for moving said arm from a home position to a diverting position, said actuator being adapted to permit said arm to move away from the diverting position upon impact with an object to be diverted to thereby absorb at least some of the impact between the arm and the object being diverted; and

wherein said arm comprises at least first and second arm portions, said first and second arm portions releasably interlocked, when released said first and second arm portions permitting removal of the drive belt without disassembly of the paddle diverter assembly.

16. (original) The paddle diverter assembly according to Claim 15, wherein said first and second arm portions are slidably releasable.

17. (original) The paddle diverter assembly according to Claim 15, wherein said first and second arm portions include a slidable joint therebetween, said slidable joint being selectively

Applicant : Stephen C. Wolf
Serial No. : 10/796,917
Page : 5

fixable wherein said first and second arm portions are interlocked and being selectively releasable to permit removal of said belt.

18. (original) The paddle diverter assembly according to Claim 17, wherein said slidable joint comprises a dovetail joint.

19. (original) The paddle diverter assembly according to Claim 18, wherein said dovetail joint comprises an angled dovetail joint.

20. (original) The paddle diverter assembly according to Claim 18, wherein said arm portion comprises at least two extruded sections.

21. (currently amended) A diverter system comprising:

a conveying surface having a conveying direction and for conveying an article at a conveying speed;

a pair of diverter assemblies at opposite sides of said conveying surface, each of said diverter assemblies comprising an arm mounted for pivotal movement between a non-diverting position and a diverting position wherein said arm is pivoted across at least a portion of said conveying surface; and

a drive system [[for]] independently and selectively moving said arms between said diverting positions and said non-diverting positions wherein said arms may be sequentially or each arm may be individually moved to their respective diverting positions and wherein an article conveyed on said conveying surface is diverted in a diverting direction when the article contacts one of said arms when said one arm is in said diverting position, wherein said drive system permits said arms to pivot away from their diverting positions when impacted by an article to thereby reduce the impact on the article being diverted and return said arms to their diverting positions by an electromagnetic field.

Applicant : Stephen C. Wolf
Serial No. : 10/796,917
Page : 6

22. (cancelled)

23. (original) The diverter assembly in Claim 21, wherein said drive system comprises a driver for each arm, said drivers being independently actuated to move said arms to their respective diverting positions.

24. (original) The diverter assembly in Claim 23, wherein said drive system comprises a controller, said controller selectively and independently actuating said drivers.

25. (original) The diverter assembly in Claim 24, wherein said controller comprises a servo controller.

26. (original) The diverter assembly according to Claim 21, wherein each of said arms includes a driven diverting surface.

27. (original) The diverter system according to Claim 26, wherein at least one of said driven diverting surfaces comprises a drive belt.

28. (original) The diverter system according to Claim 27, wherein each arm comprises a horizontal extent, said at least one driven diverting surface comprising a belt extending around said horizontal extent, said belt being driven about said horizontal extent and providing said driven diverting surface.

29. (original) The diverter system according to Claim 21, wherein each of said arms includes a horizontal extent and a belt extending around said horizontal extent, said belts being driven around their respective horizontal extents and providing driven diverting surfaces for each of said arms.

Applicant : Stephen C. Wolf
Serial No. : 10/796,917
Page : 7

30. (original) The diverter system according to Claim 28, wherein each of said drive belts is driven by a driven roller, said driven rollers driven by said drive system.

31. (original) The diverter system according to Claim 30, wherein each of said driven rollers includes a driven axis about which said driven roller is driven, and said arms pivoting about a respective pivot axis when pivoting between said non-diverting position and said diverting position.

32. (original) The diverter system according to Claim 31, wherein said driven axis of a respective arm and said respective pivot axis of said respective arm are generally collinear.

33. (original) The diverter system according to Claim 32, wherein said drive system is adapted to de-couple movement of said drive belts about said driven axes from movement of said arm about said pivot axes.

34. (original) The diverter system according to Claim 33, wherein said drive system includes a motor for pivoting said arm and a motor for driving said driven belt, said motors independently actuated by said drive system.

35. (previously presented/withdrawn) A belted driving assembly comprising:

 a rigid member having a longitudinal extent along a longitudinal axis and a transverse extent;

 first and second spaced apart pulleys mounted to said rigid member; and
 a drive belt, said drive belt supported by said pulleys about said rigid member, and said rigid member comprising first and second portions, said first and second portions releasably interlocked at a fixed length and being releasable wherein said first pulley and second pulley can be moved closer together wherein said belt can be removed for repair or replacement.

Applicant : Stephen C. Wolf
Serial No. : 10/796,917
Page : 8

36. (withdrawn) The belted driving assembly according to Claim 35, wherein said driven diverting surfaces comprise driven belt.

37. (withdrawn) The belted driving assembly according to Claim 35, wherein said first and second portions are releasably interlocked at a joint.

38. (withdrawn) The belted driving assembly according to Claim 37, wherein said joint is angled with respect to said longitudinal axis.

39. (withdrawn) The belted driving assembly according to Claim 38, wherein said joint comprises a dovetail joint.

40. (currently amended) A method of selectively diverting an object, said method comprising:
providing at least one paddle assembly having an arm;
moving the arm with a drive assembly to a diverting position; and
absorbing at least some of the impact between the object and the arm with the drive assembly allowing the arm to move away from the diverting position when the arm makes contact with an object to thereby absorb some of the impact; and
returning the arm to the diverting position with an electromagnetic field.

41. (original) The method according to Claim 40, wherein said moving comprises pivoting the arm to the diverting position.

42. (original) The method according to Claim 41, wherein said pivoting includes pivoting the arm with a servo controlled motor.

43. (original) The method according to Claim 40, further comprising providing a pair of paddle assemblies and selectively moving each of the paddle assemblies to a diverting position.

Applicant : Stephen C. Wolf
Serial No. : 10/796,917
Page : 9

44. (original) The method according to Claim 43, wherein said selectively includes individually moving the paddle assemblies.

45. (previously presented) The paddle diverter assembly according to Claim 15, wherein said first and second arm portions releasably interlock at a fixed length to form a rigid member having a longitudinal extent along a longitudinal axis and a transverse extent, further comprising first and second spaced apart pulleys mounted to said rigid member, said belt drive being supported by said pulleys about said rigid member, and said first and second arm portions releasably interlocked at a fixed length and being releasable wherein said first pulley and said second pulley can be moved closer together wherein said belt can be removed for repair or replacement.

46. (new) The paddle diverter assembly according to Claim 6, wherein said arm comprises a first arm, said diverter assembly in combination with a conveying surface and a second arm on an opposed side of said conveying surface from said first arm, and a control system, said control system including said servo controller and a second motor for moving said second arm from a home position to a diverting position, and said control system operable to move said first arm and said second arm asynchronously.

47. (new) The paddle diverter assembly according to Claim 46, wherein said control system further includes a pair of sensors, said sensors for detecting the leading edge and the trailing edge of an article on said conveying surface, and said control system determining the length of an article being diverted.